Shuzo). The purified DNA fragment can be preferably used in the method of the present invention. Furthermore, a DNA array can be prepared by immobilizing the gene or a fragment thereof onto a support according to a known method, for example, by introducing an amino group to the support. Also, a DNA array onto which gene are arrayed and immobilized at high density can be prepared by conducting the immobilization procedure using an instrument for preparing DNA arrays such as an instrument for preparing DNA chips from GMS.

The use of such a DNA array makes it possible to simultaneously measure the contents of various nucleic acid molecules in a nucleic acid sample and has the advantage that the measurement can be conducted using a small amount of a nucleic acid sample.

Any genes or DNA fragments derived from the genes are immobilized onto the DNA array used in the present invention. Preferably, genes encoding proteins that are expected to have functions related to endocrine disrupting activities or DNA fragments derived from the genes are immobilized. If a fragment is used, a fragment of, for example, about 1 kb in length can be preferably used, although the length of the fragment is not limited to specific one. The length may be shorter or longer than that described above as long as the fragment specifically

hybridizes with a nucleic acid from a test sample. Examples of such genes include, but are not limited to, a gene for a hormone receptor, a gene encoding a cofactor for a receptor, a gene encoding a protein involved in signal transduction from a receptor, a gene encoding a protein involved in biosynthesis or metabolism of a hormone and an oncogene.

For example, mRNAs prepared from a cell or a tissue (organ) that is sensitive to an endocrine disruptor or cDNAs obtained by reverse transcription using the mRNAs as templates can be used as nucleic acid samples containing a gene of which the expression is altered as a result of the influence of the endocrine disruptor. Such mRNAs are obtained over time or on different days after being exposed to the endocrine disruptor.

The cell to be exposed to a sample containing an endocrine disruptor may be a cell collected from an organism, or it may be a cultured cell. The tissue is not limited to specific one as long as it is supposed to be influenced by an endocrine disruptor. Furthermore, the origin of the cell or the tissue, or the organism to be used is not limited to human. The length of the time of exposure to an endocrine disruptor may vary depending on the organism, the endocrine disruptor, the gene that is influenced by the endocrine disruptor or the like to be

used.

On the other hand, a nucleic acid sample containing mRNAs, or cDNAs therefor, similarly prepared from a cell, a tissue or an organism as a control is subjected to hybridization under stringent conditions. The nucleic acid sample can be suitably labeled as follows such that it can be readily determined whether or not the nucleic acid sample hybridizes with a DNA on a DNA array.

For example, a radioisotope, a fluorescent substance, chemiluminescent substance, an antigen recognized by an appropriate antibody or the like can be used for labeling. Alternatively, hybridization may be first conducted without labeling the nucleic acid sample, and then an intercalating substance that emits fluorescence or chemiluminescence may be used for labeling.

Hybridization of the thus obtained nucleic acid sample with the DNA on the DNA array can be conducted according to a known method. It is natural to conduct hybridization and washing steps under optimal conditions depending on the length of the DNA on the DNA array or the like. These steps can be conducted under conditions, for example, as described in Molecular Cloning, A Laboratory Manual, 2nd ed., pp. 9.52-9.55 (1989).

By comparing results of hybridization for a control nucleic acid sample with those for a nucleic acid